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THE CENTIPEDS (CHILOPODA) OF SOUTH BIMINI, BAHAMA ISLANDS, BRITISH WEST INDIES

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The present paper is concerned with a collection of chilopods secured by a field party from the department of Insects and Spiders of the American Museum of Natural History (Drs. Mont A. Cazier and Willis J. Gertsch and Dr. and Mrs. Charles Vaurie) on South Bimini Island during 1951. For a period of nearly four months, from May 1 until late August, two or more of these individuals were in residence at the Lerner Marine Laboratory, through the courtesy of Dr. Charles M. Breder, Jr., as guests of the Department of Fishes and Aquatic Biology of the American Museum of Natural History. Although the chilopods were to some extent incidental to the purposes of the expedition, which was a survey of the insect and spider fauna of the Bimini Island group, a very representative collection was assembled. They were for the most part brought to light by the usual methods of searching beneath stones and ground litter and especially by routine sifting of forest detritus and processing by the Berlese method. It is notable that only a single, juvenile representative of the Diplopoda was taken during the quite intensive survey of the ground fauna.

Seven species of the Class Chilopoda are represented in the collection, all being from South Bimini, which is the most varied and least disturbed island of the group. One of these is the large *Scolopendra alternans* Leach, a characteristic centiped of the West Indian area in which it is widespread and common.

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Another is *Ityphilus lilacinus* Cook, heretofore known only from Sugar Loaf Key, Florida, the type locality, and from Puerto Rico. Four of the remaining forms represent new species, and the fifth is regarded as a new subspecies.

The genus *Bimindyla*, based on one of the new geophiloid species, is especially interesting because of its close relationship to two genera of the littoral zone. Of these *Hydroschendyla* (the type and only known species of which is *submarina* Grube) occurs widely on the Atlantic coasts of continental Europe and those of the islands of Great Britain and of the Bermuda Islands between the tide levels, and *Haploschendyla* occurs on the south Mediterranean coastal areas and on the Madeira Islands. The habitat of the *Bimindyla* is not known with certainty but may prove to be similar to that of *Hydroschendyla*.

The new species of *Nesidiphilus* is closely allied to the previously known species of the genus which occur elsewhere in the West Indies (Cuba, Haiti, Jamaica) and in Nicaragua. The new *Cupipes* is regarded as a subspecies of *C. lineatus* Newport, a form thus far recorded only from the Lesser Antilles (St. Vincent). The *Lamyctes* seems to be the first representative of this genus from the West Indies, the lack of records in all probability being due to the small size of the individuals and their consequent neglect or oversight by collectors rather than to scarcity of representatives on these islands. *Pselliodes*, allied to the well-known house centipeds of the genus *Scutigera*, is a genus represented widely in the fauna of the West Indies and the areas bordering the Caribbean Sea, and to it is referred the apparently quite distinct new species here recorded from Bimini.

For the opportunity of studying this collection my sincere appreciation is here expressed to Dr. W. J. Gertsch, curator in the American Museum, and to him and associates on the expedition to Bimini for giving attention to a much neglected group of animals.

All types are deposited in the collection of the American Museum of Natural History.

FAMILY **SCHENDYLIDAE**

GENUS **BIMINDYLA,** NEW GENUS

A genus in some respects intermediate between *Hydroschendyla* and *Haploschendyla*. It agrees with the first of these, and differs from the second, in having the median portion of the labrum

smooth or but weakly crenate, but differs from both in not having the labrum deeply incurved. Lateral portions of labrum with a few well-separated teeth or pectinae. Claw of palpus of second maxillae closely pectinate. Differing from *Hydroschendyla* and agreeing with *Haploschendyla* in lacking coxal glands. Prepleurites present on last segment. Tarsus of anal legs biarticulate, lacking pretarsus or claw. Tergites bisulcate.

GENEROTYPE: *Bimindyla gertschi*, new species.

Bimindyla gertschi, new species

Figures 1 and 2

Color yellow, with a median longitudinal and geminate dark stripe along dorsum; also with a longitudinal band on each side composed of dark spots and blotches on the pleurites.

Cephalic plate slightly wider than long, without frontal suture; the caudal margin wide and straight; overlapping the basal plate. Antennae composed of the usual 14 articles of which all except the ultimate are short; ultimate article about equal in length to the two preceding taken together. No clypeal areas.

Labrum nearly transverse, not deeply incurved and not strongly sclerotized except at lateral ends; margin smooth or weakly crenate over middle, with a few teeth or pectinae on each lateral portion. Claw of palpus of second maxillae short, its margin closely pectinate; coxae narrowly connected by an isthmus at middle; setae on the palpus short and sparse.

Basal plate broader across caudal margin than the cephalic plate, a little narrower anteriorly. Second tergite as wide anteriorly as the basal plate, narrowed caudally; wider than the immediately succeeding tergites (see fig. 1).

Prehensors covered from above except a little at base of head on each side; claws short, when closed not attaining front margin of head; none of the articles armed within. Anterior margin of prosternum smooth; chitinous or sclerotic lines not apparent.

Tergites bisulcate, the sulci rather close to median line. Spiracles small, subelliptic in antero-posterior or somewhat oblique direction, the form possibly due at least in part to shrinkage in the preservative. Sternites nearly smooth, without sulci or ventral pores.

Last sternite proportionately short and broad, subtrapeziform, the wide posterior margin nearly straight, being but slightly con-

vex. Anal legs with tarsi biarticulate, clawless. Last coxae not especially inflated, narrower proximally than distally, lacking pores. (Fig. 2.)

Pairs of legs, 79.

Length, 50 mm.

TYPE MATERIAL: One female, the holotype, taken in June, 1951, by M. A. Cazier and C. and P. Vaurie.

FAMILY **BALLOPHILIDAE**

GENUS **ITYPHILUS** COOK

Ityphilus lilacinus Cook

Ityphilus lilacinus COOK, 1899, Proc. Ent. Soc. Washington, vol. 4, p. 306, pl. 5, figs. 1a–e. CHAMBERLIN, 1950, Proc. Biol. Soc. Washington, vol. 63, p. 157.

This species is represented by numerous specimens taken by Gertsch, Cazier, and C. and P. Vaurie in May and June.

FAMILY **CHILENOPHILIDAE**

GENUS **NESIDIPHILUS** CHAMBERLIN

Nesidiphilus cazieri, new species

Figures 3 and 4

Dorsum yellow, marked throughout its length with a geminate median black stripe, the black on some segments in some specimens spreading over most of the tergite. Also a lateral black band composed of dots and streaks on the pleurites much as in *B. gertschi*. Some black markings also on the more posterior sternites.

Head longer than wide, widest anteriorly, with the sides moderately converging caudad; no frontal suture present. Last article of antennae shorter than the two preceding articles taken together.

Claws of prehensors when closed much surpassing the anterior margin of head and much exposed from above; claw armed at base with an acute black tooth; femuroid on inner side with a rounded, nodular tooth towards distal end; prosternum anteriorly with two submedian, low, subconical teeth.

Two small clypeal areas. Median piece of labrum with eight long acuminate teeth; lateral pieces pectinate on mesal half of margin, nearly smooth otherwise. (Fig. 3.) First maxillae

with coxae broadly fused; with two long membranous lappets on each side. Palpi of second maxillae with claw smooth; last joint densely clothed with stiff setae on mesal surface; coxae broadly united at middle; pore closed on mesal side of chitinous line which ends mesad of pore on each side.

Tergites deeply bisulcate. First spiracle much larger than those following it, a little elongate vertically, the others strictly circular. Sternites with a median longitudinal sulcus.

Last tergite somewhat shield shaped but broadly convex behind, not wholly covering the coxae. Last sternite of moderate width, strongly trapeziform. Anal coxae inflated, with pores over surface small and numerous. Telopodite of anal legs composed of six articles, not ending in a claw or pretarsus. Anal legs in male moderately inflated, with the last joint shorter and less acuminate than in the female.

Pairs of legs, 53 to 57.

Length near 35 mm.

TYPE MATERIAL: Male holotype, female allotype, and numerous paratypes of both sexes taken by Gertsch and Cazier in May and a young female paratype taken by Cazier and C. and P. Vaurie in July.

The present species differs superficially from the Cuban *N. montis* in the presence of the conspicuous median dorsal black stripe and that on the sides. From the Jamaican *N. latus* it differs in having the rudiment of a pretarsus on the anal legs and in the fewer legs.

FAMILY **SCOLOPENDRIDAE**

GENUS **SCOLOPENDRA** LINNÉ

Scolopendra alternans Leach

Scolopendra alternans LEACH, 1815, Trans. Linnean Soc. London, vol. 11, p. 383.

Three specimens taken in May by Gertsch and Cazier.

This is a common and characteristic West Indian chilopod.

GENUS **CUPIPES** KOHLRAUSCH

Cupipes lineatus biminensis, new subspecies

Figure 6

Head with paired longitudinal sulci over posterior half only. Tergites with complete, fine, paired longitudinal sulci; with

conspicuous longitudinal ridges as in *lineatus*. Last tergite with a median longitudinal sulcus.

Sternites with paired longitudinal sulci but showing no median furrow.

The last coxae extended well beyond the sternite, caudally truncate and bearing no spine such as present in *lineatus*. Claw of anal legs much exceeding the second tarsal joint in length; femur and tibia with a median longitudinal furrow over their entire lengths, the prefemur with a dorsal furrow only towards distal end. (Fig. 6.)

Length, 20–24 mm.

TYPE MATERIAL: One specimen, the holotype, taken in May by Gertsch and Cazier, and two paratypes taken in June by Cazier and C. and P. Vaurie, all of uncertain sex.

This subspecies differs from *lineatus* Newport, known from the Lesser Antilles (St. Vincent), in wholly lacking teeth or spines on the anal legs or any of the articles, and apparently in its much smaller size, *lineatus* having a typical length of 40 mm.

FAMILY **HENICOPIDAE**

GENUS **LAMYCTES** MEINERT

Lamyctes nesiotes, new species

Figure 5

Distinguished from *L. fulvicornis* Meinert and most other species of the genus in having the prosternal teeth 2–2 instead of 3–3, or 2–2 normal teeth with a pale, dentiform additional process at each ectal angle of the anterior prosternal margin. It is further quite distinct in bearing on each side of the dental series a porodont in the form of a distinct spine, nothing in the form of a porodont being detectable in other species. (See further fig. 5.)

Cephalic plate a little longer than wide (5.5:5). Antennae composed of 28 to 29 articles. The usual single ocellus on each side on a dark area.

Posterior angles of none of the dorsal plates produced.

Thirteenth and fourteenth (and probably the fifteenth) pairs of legs with tarsi biarticulate, the others with tarsi uniarticulate. The usual distal tooth or process on tibia of legs I to XI.

Coxal pores 2 (3), 3, 3, 2.

Claw of female gonopods entire; basal spines 2–2.

Length, 6 mm.

TYPE MATERIAL: Female holotypes and several female paratypes taken in August by C. and P. Vaurie. Unfortunately all the specimens had lost their anal legs which accordingly cannot at present be described.

FAMILY **SCUTIGERIDAE**

GENUS **PSELLIODES** CHAMBERLIN

Pselliodes biminensis, new species

Dorsum black at sides, the black bands separated by a median longitudinal white stripe which shows a slightly greenish tinge, the white stripe narrower than the black bands; the median white band not bisected by a dark line as it is in *cubensis* and *haitiensis*, but the borders of the stomata showing a dilute ferruginous color. The median white stripe continuing over head to labral margin, narrowing acutely forward, the light stripe proportionately narrow, not occupying most of the interocular space as it does in *cubensis;* the head on each side of median stripe brownish yellow. The legs yellow or somewhat ochraceous, entirely without darker annuli. Sides and venter light gray.

Stoma saddles only moderately elevated. Ordinary tergites with caudal margin mesally obtusely excised. Last tergite narrowing caudad, the caudal margin convex, not at all incurved at middle, in this respect differing from *cubensis* (Chamberlin) and *pulchritarsis* (Verhoeff).

Tarsus 1 of leg 7 composed of seven articles; tarsus 2, of 35. Tarsus 1 of leg 10 with 10 articles; tarsus 2, with 37. Tarsus 1 of leg 14 composed of 10 articles; the second tarsus, of 39. The first tarsus of leg 15 composed of 11 articles; the second, of above 111, the tip being broken off from both legs in the type specimen.

Length, 20 mm.

TYPE MATERIAL: One male, the holotype, taken in May, 1951, by Gertsch and Cazier.

Unfortunately the antennae were lost from the type as was part of the legs, making a complete description impossible at this time.

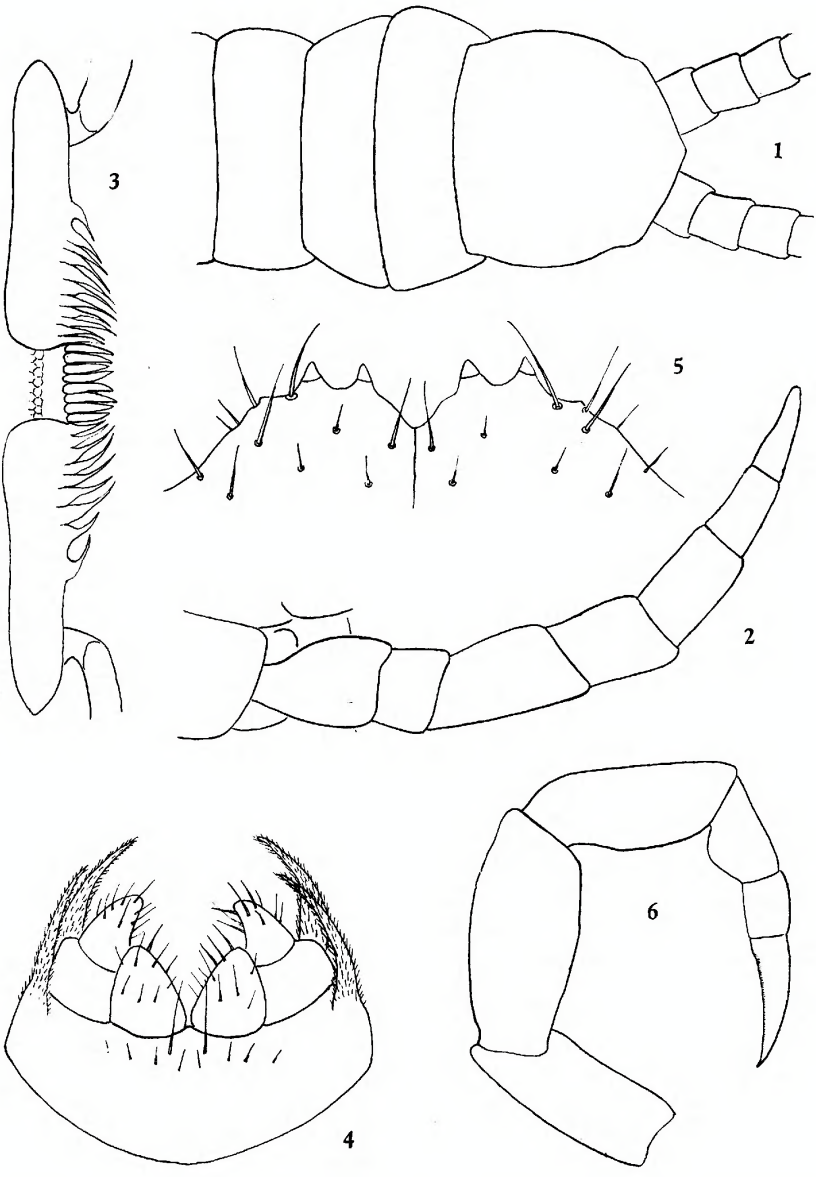

FIG. 1. *Bimindyla gertschi*, new species, cephalic plate and first three tergites in outline.

FIG. 2. *Bimindyla gertschi*, new species, left anal leg, bent out laterad from the sternite.

FIG. 3. *Nesidiphilus cazieri*, new species, labrum.

FIG. 4. *Nesidiphilus cazieri*, new species, the first maxillae.

FIG. 5. *Lamyctes nesiotes*, new species, anterior border of the prosternum.

FIG. 6. *Cupipes lineatus biminensis*, new subspecies, anal leg, lateral view.